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IS 6802 (1986): Prosthetic Hip Joint [MHD 10: Medical Laboratory Instruments]

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IS : 6802 - 1986

(Reaffirmed 2002)

Indian Standard

SPECIFICATION FOR PROSTHETIC HIP JOINT

(First Revision)

1. Scope — Specifies the requirements for the prosthetic hip joint for the above and through-knee amputees and covers the following types.

1.1 Forged mild steel type with ball race screw and bearing ball, and rigid male component.

1.2 Stainless steel cast type with bush fitting and rigid female/male component.

1.3 Stainless steel sheet type with bush fitting with rigid female/male component.

2. Shape and Dimensions — Typical shape and dimensions of the above mentioned three different types of hip joint are shown in Fig. 1.

3. Functional Requirements

3.1 There shall not be any frictional, jerky or mediolateral movements at the joint.

3.2 The joint shall be capable of producing an angular movement of 120° on either side from neutral position.

4. Constructional Requirements

4.1 *Forged Mild Steel Type*

4.1.1 It shall have the ball race screw and bearing balls with arrangements to replace either ball race screw or balls or both.

4.1.2 Spider locking washer shall be used to prevent accidental unscrewing.

4.2 *Stainless Steel Cast/Sheet Type*

4.2.1 Rigid component may either be of male or female type.

4.2.2 It shall have bush fitting with additional locking screws or permanent hollow rivet.

5. Material

5.1 *Forged Mild Steel Type*

5.1.1 Forged steel conforming to IS : 2004-1978 'Specification for carbon steel forgings for general engineering purpose (*second revision*)'.

5.1.2 Ball race screw and steel balls conforming to IS : 4398-1972 'Specification for carbon-chromium steel for the manufacture of balls, rollers and bearing races (*first revision*)'.

5.2 *Stainless Steel, Cast Type* — Conforming to IS : 3444-1978 'Specification for corrosion resistant alloy steel and nickel based castings for general applications (*first revision*)' or IS : 10774-1983 'Specification for corrosion resistant high alloy steel and nickel base investment castings for general applications'.

5.3 *Stainless Steel, Sheet Type* — Conforming to IS : 6911-1972 'Specification for stainless steel plate sheet and strip'.

6. Workmanship and Finish

6.1 All components shall have good finish and be free from mechanical flaws.

Artificial Limbs Sectional Committee, CPDC 20; Prosthetic and Orthotic Appliances Subcommittee, CPDC 20 : 1 [Ref : Doc : CPDC 20 (1934)]

Adopted 30 April 1986

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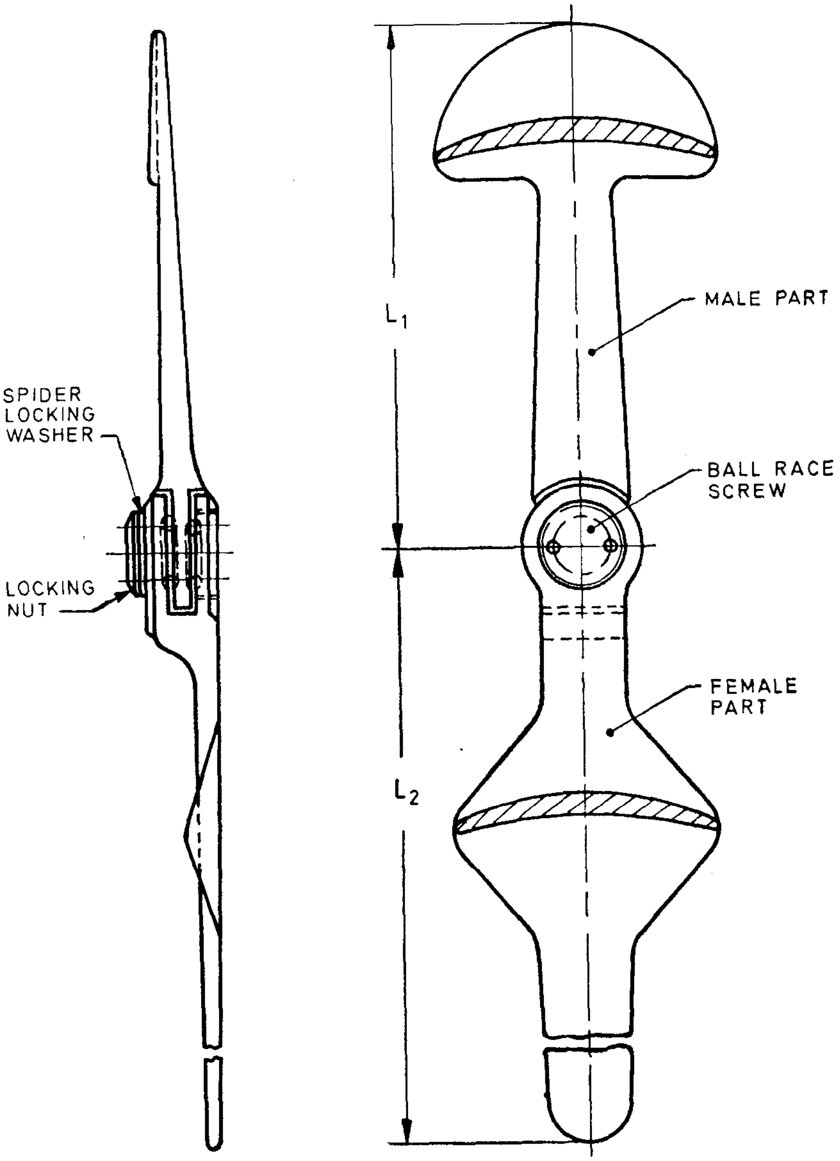

Length	L_1	L_2
Child	80 ± 5	120 ± 5
Adult	110 ± 5	140 ± 5

All dimensions in millimetres.

FIG. 1 PROSTHETIC HIP JOINT, TYPICAL

6.2 The forged components shall be hardened and tempered to a hardness of 250 *HV*.

6.3 Stainless steel components shall be buffed and shall have matt finish.

7. Endurance Test — The complete assembled unit shall be tested for 20 000 cycles in a suitable testing fixture to simulate the actual conditions. After completion of the test the functioning of the joint shall remain unimpaired.

8. Marking — The joint shall be marked with the manufacturer's name, initials or recognized trademark.

8.1 *ISI Certification Marking* — Details available with the Indian Standards Institution.

9. Packing — As agreed to between the purchaser and the manufacturer.

10. Sampling — A sampling scheme and criteria for acceptance shall be as agreed to between the purchaser and the manufacturer. However a recommended scheme is given below.

10.1 *Lot* — All the prosthetic hip joints of the same type shall be grouped together to constitute a lot. Each lot shall be tested for the requirements of this specification.

10.2 All the prosthetic hip joints shall be individually examined for shape and dimensions (**2**) constructional requirements (**4**) and workmanship and finish (**6**). All those hip joints which fail in one or more of the above requirements shall be rejected and only satisfactory ones be accepted.

10.2.1 Suitable test certificates shall be issued by the manufacturer for the material used for the manufacture of prosthetic hip joints.

10.3 One assembled unit shall be tested for endurance test as per **7**. The sample unit shall pass if the lot is to be accepted under this clause.

EXPLANATORY NOTE

In this first revision two additional types of hip joints, that is, stainless steel, cast type and sheet type, have been added. Besides, emphasis has been given on functional and performance requirements.

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